CITY OF SANTA ANA PUBLIC WORKS AGENCY

ENGINEERING CAD STANDARDS VERSION 2.1

APPROVED BY: _____ DATE: _____

TABLE OF CONTENTS

1. Introduction

This document contains instructions for using Bentley Microstation versions 7 through 8i to accommodate the City of Santa Ana's CADD usage standards. These standards have been implemented to promote exchangeability and reusability by creating a uniform set of procedures. The procedures are not only intended to be used within the Public Works Agency (PWA), but also for consultants submitting plans and other CADD documents intended for PWA storage and reuse. That been said, this is a living document. Any suggestions for changes will be reviewed by staff and if accepted will be incorporated into the next revision.

The use of master-files is central to these procedures. For purposes related to this document, a master-file is a file that is referenced by other files in the design. A large portion of this document describes in detail the procedures necessary to standardize those master-files. The following elements are central to this process of standardization:

- Seed Files
- Cell Libraries
- Level Conventions
- Color Tables
- Text and Line Types

2. Drafting Standards

Although requirements for drafting standards are beyond the scope of this document, there are some elements that need to be considered in order for these CADD standards to be implemented successfully. They include:

A. Not Reusing Files from Prior Projects

Using CAD files from prior projects as seed files perpetuates the inconsistencies the CAD standard was designed to prevent. The reason is obvious: those files did not conform to the present CAD standard. Therefore, the seed files for new designs should always originate from:
K:\CADD\Workspace\system\seed\ for staff
or
http://www.ci.santa-ana.ca.us/pwa/EngineeringServices.asp for public submission

B. Not Modifying the User Configuration File (UCF)

When one enters Microstation V8i there are options for *User* and *Project* at the bottom left corner of the *file open* dialog box. *CSA* should be selected for both settings. These options set the program default settings to match those specified in the CAD standard. Using the Workspace/Configuration menu within the program to individualize those settings will create inconsistencies in the design and should be avoided.

C. Not Deviating from the Default Options

- *Why Full-Path References Should No Longer be Used*

  The default setting in the UCF for full path referencing is off. References located in other project directories are subject to modification, deletion or path changes. The only way to insure that a design is not inadvertently modified is by locating all files related to a given project in the project directory. If it becomes necessary to reference a file from another project, a copy of the reference should be placed in the project folder.
- *Why Changing the Plot Driver and/or Pen Table is No Longer Needed*

  Under the UCF the print driver and pen table are set to default to provide Adobe PDF. The filename is set to default to match the filename. No other changes or modifications are necessary. If a hardcopy is desired it should be printed from the PDF.
- *Why we no Longer want to Override Level Symbology*

  Adherence to these standards is greatly simplified through the common sense use of level names that accurately describe the features on the plan. When the appropriate level name is chosen, the level symbology has been chosen to reflect the CAD standard. For that reason, symbology should always be set “ByLevel”.

D. Translation of elements in the design space

Just as it would be problematic to move a topographic element from its true position, it is important not to move items such as title borders, construction notes, signatures and stamps from their established locations. Their proper placement facilitates correct alignment and rotation throughout the design. It moving them is necessary, it is to be done using the file reference move command, leaving the original file intact.

3. Seed Files

A. Seed File Types

When the NEW file command is used to create a drawing, Microstation will create that drawing using what is called a seed file. Seed files are prototype drawings that contain the drawing settings. The seed files include the cell library, level name file, dimension settings, working units, global origin and text settings. The City has created several seed files in an effort to implement these standards. They include the following:

- nnnnnAA-**Ω**00.dgn (Topography alignment)
- nnnnnBA-**Ω**00.dgn (Street Lighting/Electrical alignment)
- nnnnnCA-**Ω**00.dgn (Center Line & R/W Line alignment)
- nnnnnDA-**Ω**00.dgn (Street Design alignment)
- nnnnnDB-**Ω**00.dgn (Street Design Title Border)
- nnnnnDP-**Ω**00.dgn (Street Design Profile)
- nnnnnQA-**Ω**00.dgn (Storm Drain alignment)
- nnnnnQP-**Ω**00.dgn (Storm Drain Profile)
- nnnnnUA-**Ω**00.dgn (Utility alignment)
- nnnnn-DEnn-Rnn.dgn (Sheet File)
- signature *name*.dgn (Signature/Stamp)

These files should be renamed according to criteria outlined in section 10, *File Naming*. Others can be created by using criteria outlined in this manual.

B. Universal Seed File Properties

If the scale of the drawing is to be something other than 20 scale, the default text size needs to be changed to the corresponding text height (see section 6).

- The working units should be: Master Units: (ft) Sub Units: (TN)
- The subunits are defined as: 10 (TN) = 12 (in)
- The resolution should be: 10 (TN per ft) 1000 (Pos Units per TN)
- Global Origin coordinates are: x = 5853251.6353, y = 1941251.6353

4. Cell Libraries

Cell libraries contain commonly used elements or "blocks". Standard cell libraries have been developed for use by PWA. Care should be taken to avoid creating custom cells in the standard cell libraries since a cell library update will override the custom cells. The name of the standard cell library is:

- pwacel.cel (Street Design and Topography)

The respective cell library is automatically attached to the standard seed files. Contact your CAD representative for the location of these files, updates or cell additions.

5. Color Table

The following color table should be used in all drawings and is the default to the standard seed files: **color.tbl.** When a drawing is converted from AutoCad to Microstation, the program assigns the acad.tbl color table. To properly convert a drawing, the color table as well as the color of the elements must be changed to match standards.

6. Text

A. Fonts

Font symbology file CSAfont.rsc is available on the City website. It includes the only fonts that should ever be used:

- Arial
- Bold
- CHAR_FAST_FONT
- Dot
- Engineering
- Simplex

B. Font Usage and Size

The following is a summary of text size and usage based on 20 scale drawings. For other scales, the size should be adjusted proportionately:

- **Engineering" (Size 1.8)** Construction Notes, Callouts, dimensions, title block descriptions, profile elevations, existing profile elements, sheet numbers profile scales, plan view stationing
- **Engineering" (Size 2.5)** Profile stationing, profile scale title
- **Bold" (Size 2.5)** Profile elevation labels
- **Bold" (Size 3)** Proposed profile elements, title block plan type, title block project limits
- **Bold" (Size 4)** Match Line Text, intersecting street names, construction note title

- **Bold" (Size 6)** Primary street name, primary street title, plan set number (lower left of title block)

Line Spacing (LS) should be ½ of the text height.

Note that the size of the text for different scales are calculated by multiplying by the appropriate scale. For example, a 20 scale drawing will have construction notes of (0.09 X 20) = 1.80 and titles of (0.20 X 20) = 4.00.

7. Plotting

As of August 3, 2009, plotting from Microstation will be directly to Adobe Portable Document Format (PDF) through the use of electronic signatures.

8. Electronic Signatures

As with other agencies, the Santa Ana Public Works Agency is working to minimize the use of paper and printing products wherever that is possible. Although generic file formats (such as PDF) that allow for the universal exchange of documents have been available for some time, the final obstacle to their use has been the inability to sign construction documents electronically in a way that was both inexpensive and secure. Recent releases of the Microstation platform make that possible

A. Creating the Signature/Stamp File

A generic signature/stamp file has been included for use as a template for positioning the electronic signature and stamp. Replace the stamp with the stamp of the responsible Engineer. Scan a copy of the Engineer's signature and place it directly into the file. Be sure that it is sized and positioned exactly as the blank bitmap that is already in the file. The responsible Engineer should assign a master password to the file that only he or she should know.

The file has already been created with a generic user. The password for that user is blank. It should be left that way. It is also set to allow read permissions to everyone. All other permissions are denied and should be left that way until the Engineer is ready to allow printing. At that time, the Engineer should open the file, switch the print permissions on and save the file. When printing is finished, the file should be reopened and the print permissions should be deactivated.

B. Attaching the Signature/Stamp File

The standard title block and the standard title sheet already have the generic signature/stamp file referenced into it. After opening each of them, double-click on the file reference entitled *Default Signature* and attach the responsible Engineer's signature file in its place.

When referencing the standard title block or the standard title sheet it is important that nested references be activated and the nesting level be set to 1. Without that step, the signature and stamp will never be seen.

C. Using the Signature/Stamp File

From this point forward, the user will be prompted for a password whenever any file that contains either the standard title block and the standard title sheet is opened. How the user responds to this password dialog is important.

1. **When the file is opened for editing only, the use can select either *Cancel* or *OK*.** If OK is selected the signature and title with appear but print permissions will be deactivated. If CANCEL is selected the signature and title will not show up at all. In either case, the user did not intend to print so it makes no difference.
2. **When the file is opened for making prints without a signature the user should select *Cancel* when he or she sees the signature dialog box**. That will make it possible for the user to print. When the user selects *Cancel*, the signature and stamp will not be visible. This is normal.
3. **When the file is opened for printing with a signature, the user should select OK without entering a password** (the default password should be blank). Since the user will only be making signed prints at the instruction of the responsible Engineer, the print permissions will have been turned on, making printing possible.

9. Preference and Configuration Settings

Although preference and configurations settings are generally left to the user, there are several that are germane to the process of standardization. They are as follows:

A. Preferences/Operation

It is important that automatic file compression, the saving of settings and saving of design file changes be turned off. This will prevent unwanted changes to the file when it has been opened for viewing by someone other than the managers of the project.

B. Preferences/Reference/Save Relative Path

Proper archiving of files requires that the integrity of the design be maintained. This cannot be guaranteed if the project has remote references that are not under the control of the project. Since control of the project is managed through the individual project's directory structure, it is important that the references be limited to those within that structure. Additionally, the integrity of the signature management system cannot be guaranteed unless signature permissions are strictly limited to the local directory. Therefore, *Save Relative Path* must remain disabled.

10. File Naming

A. Master-file Naming

Master-files are named using the following convention:

nnnnnTS- ΩRR.DGN

nnnnn is the project coordination number. This number is presently generated by the Design Engineering Division at the time that the project is created. Consultants need to obtain this from the designated project manager before starting work.

T is the Plan Type (se the Plan Type list below)
S is the Plan Sub-Type (see Sub-Type list below)
Ω is the organization responsible for creation or modifications to a file of which they are not the originator. (see Originator list below)
RR is the revision number (see guidelines in subsection B, *Revision Numbers*)

Plan Type (T)	Master-file	Logical Name For Reference Files
A	Survey / Topo	TO
C	Centerline / Right of Way	CL
D	Design	DE
I	Irrigation	IR
L	Landscaping	LA
B	Street Lighting/Electrical	SL
Q	Storm Drain	SD
P	Public Facilities	PF
S	Sanitary Sewer	SS
T	Channelization	CH
U	Utility	UT
W	Water	WA
X	Traffic Signalization	TS

Sub-Type (S)	Master-file
A	Alignment
B	Sheet Border
D	Detail
P	Profile

Originator	
C	Contractor/Consultant
D	Design Engineering
S	City Survey
T	Traffic Engineering
W	Water Resources

B. Revision Numbers

Sometimes it is desirable to memorialize design documents at a particular phase of the project. Possible phases may include when the project is advertised, an addendum is issued, as-builts are generated, or any other time the Engineer may find it necessary to save the design as is. When that becomes the case, the present version is left intact, with its present name and revision number. From that point forward, future changes to the file should be saved with the next revision number in the sequence. Therefore the earliest memorialized revision would be 00 and that version would be saved as version 01 with version 01 becoming the active file for modifications.

It should be noted that revision numbers should not be used for day-to-day revisions where snapshots of the design would not serve any purpose.

File Naming/Creation Example:

For a new project, the Design Division creates a project and assigns the project master-file number 10010. The Design Division requests survey from the in-house surveyor who creates a survey/topo file named 10010AA-S00.dgn and a centerline file named 10010CA-S00.dgn. Design Division then creates a street improvement plan 10010DA-D00.dgn and a design profile 10010DP-D00.dgn. Design also makes modifications to the centerline file originally created by the Survey Division and saves those revisions as 10010CA-D00.dgn, correctly leaving 10010CA-S00.dgn intact. Later the Traffic Division provides channelization by creating 10010TA-T00.dgn. Finally, the Water Division creates a water design named 10010WA-W00.dgn and later has a revision file named 10010wa-w01.dgn

C. Sheet File Naming

Sheet Files should be named as follows:

SHT-βΨNN-nnnnn-Rmm.dgn

Where **β** is the sheet type (see sheet type list below)
Ψ is the sheet sub-type (see Sub-Type list below)
N is the sequence number of that particular sheet type, beginning with 01
nnnnn is the master-file coordination number
mm is the revision number, beginning with 00.

Sheet Type β	Description
A	Title
D	Design
B	Street Light/Electrical
F	Traffic Control
I	Irrigation
L	Landscape
P	Public Facilities
Q	Storm Drain
R	Removal
S	Sewer
T	Channelization
W	Water
X	Traffic Signal

Sheet Sub-type Ψ	Description
A	Alignment
C	Composite (for title sheet only)
D	Detail
S	Section
T	Title (for non-composite projects)

D. Special Purpose Files

Special purpose files can be one of two types

1 They contain elements that are uniform throughout several locations within the design and thus are more conveniently saved as reference files.
2 Although they are master-file format, they do not appear in the final design These files include but are not limited to:

signature name.dgn (Signature/Stamp)
nnnnn construction notes.dgn (Construction notes)
nnnnn Areas.dgn (Area calculation file for cost estimates)

11. Master-file Symbology

A. Topography

Level Name	Color	Line type	Weight
Monument (Symb.)	Gray (9)	0	1
Control (Symb.)	White (0)	0	1
Water (Symb.)	Gray (144)	0	1
Sewer (Symb.)	Gray (144)	0	1
Traffic (Symb.)	Gray (144)	0	1
Electrical (Symb.)	Gray (144)	0	1
Phone (Symb.)	Gray (144)	0	1
CATV (Symb.)	Gray (144)	0	1
Gas (Symb.)	Gray (144)	0	1
Irrigation (Symb.)	Gray (144)	0	1
Street Light (Symb.)	Gray (144)	0	1
Signs (Symb.)	Gray (144)	0	1
Street Furniture (Symb.)	Gray (144)	0	1
Misc. Utility (Symb.)	Gray (144)	0	1
Post (Symb.)	Gray (144)	0	1
Tree Well (Symb.)	Gray (144)	0	1
Symbol (Elev.)	Orange (6)	0	1
AC (Elev.)	Red (3)	0	1
PCC (Elev.)	Magenta (5)	0	1
Back of Walk (Elev.)	Magenta (5)	0	1
Fence (Elev.)	*Blue (1)	0	1
Driveway (Elev.)	Cyan (7)	0	1
Edge of Pavement (Elev.)	Red (3)	0	1
Flowline (Elev.)	Yellow (4)	0	1

Top of Curb (Elev.)	Cyan (7)	0	1
Lip of Gutter (Elev.)	Magenta (5)	0	1
Natural Ground (Elev.)	Blue (1)	0	1
Vegetation (Elev.)	*Blue (1)	0	1
Centerline (Elev.)	*Blue (1)	0	1
Misc. (Elev.)	Green (2)	0	1
Retaining Wall (Elev.)	Cyan (7)	0	1
Railroad (Elev.)	Cyan (7)	0	1
Building (Elev.)	*Blue (1)	0	1
Brick Pavement (Elev.)	Magenta (5)	0	1
Post (Elev.)	*Blue (1)	0	1
Berm (Elev.)	Cyan (7)	0	1
Tree Well (Elev.)	Magenta (5)	0	1
BW	Gray (144)	3	1
Fence	Gray (144)	{CLF}	1
Driveway	Gray (144)	3	1
EP	Gray (144)	3	1
FL	Gray (144)	3	1
TC	Gray (144)	3	2
LG	Gray (144)	3	1
NG	Gray (144)	3	1
Vegetation	Gray (144)	3	0
Wheel Chair Ramp	Gray (144)	3	1
Retaining Wall	Gray (144)	{Block Wall}	1
Railroad	Gray (144)	{Rail Road}	1
Building	Gray (144)	0	1
Brick Pavement	Gray (144)	3	1
Berm	Gray (144)	3	1
Misc. 1	Gray (144)	3	1
Misc. 2	Gray (144)	3	1
Control	Gray (144)	0	1
Misc. Existing Man-Made Plature	Gray (144)	3	1
Road Features (Striping)	Gray (144)	0	1
Misc. 3	Gray (144)	3	1
Exist Utility Features	Gray(144)	3	1
Coordinate Grid	Gray(144)	1	1

*Varies: Elevations at these points should have the color of the adjacent surface AC=Red, PCC=Magenta, NG=Blue.

B. Centerline / Right of Way

Level Name	Color	Line type	Weight
Survey Centerline	White (0)	(Center)	1
Construction Centerline	Cyan (7)	(Center)	1
Centerline Annotation	Cyan (7)	0	1
Centerline Ticks and Text	Cyan (7)	0	1
Existing Street R/W	Lt. Red (99)	(R/W)	2
Proposed Street R/W	Red (3)	(R/W)	2
Existing P/L and Easements	Lt. Red (99)	(R/W)	2
Proposed P/L and Easements	Red (3)	(R/W)	2
Addresses	Red (3)	0	1
City Boundary	Red (3)	(R/W)	4
Boundary Annotation	Cyan (7)	0	1

C. Street Improvement / Design

Level Name	Color	Line type	Weight
Curb Face	Yellow (4)	0	1
Back of Curb Face	Lt. Yellow (116)	0	0
Gutter Lip	Cyan (15)	0	1
Median Curb Face	Yellow (4)	0	1
Back of Walk	Yellow (4)	0	1
Sidewalk-Tree well	Yellow (4)	0	1
Pavement Line	Orange (6)	0	1
Driveway	Yellow (4)	0	1
Center Line of Driveway	White (0)	(Center)	1
Hatch PCC	*Lt. Yellow (116)	0	0
Hatch CM	*Lt. Yellow (116)	0	0
Hatch RMVL	*Lt. Yellow (116)	0	0
WCR	Yellow (4)	0	1
Traffic Loops	Blue (1)	0	1
Parkway Culvert	Blue (1)	0	1
Proposed Fence	Yellow (4)	{CLF}	1

*Varies: Allowed to use Green (2), Lt. Yellow (116), Lt. Yellow (156) and/or Gray (160)

D. Stormdrain

Level Name	Color	Line type	Weight
Mainline-Lateral-Manhole-Catchbasin-Collar	Blue (1)	0	2
Centerline (SD)	Magenta (5)	(Center)	1

Station Text	Cyan (7)	0	1

E. Street Lighting

Level Name	Color	Line type	Weight
Conduit	Magenta (5)	0	2
Light, Pull Box	Magenta (5)	0	2

F. Traffic Channelization

Level Name	Color	Line type	Weight
Curb	Blue (1)	0	2
Proposed Striping	Red (3)	*0	2
Existing Striping	Gray (9)	*0	1
Relocated Equip.	Yellow (4)	0	1
Existing Signs	Gray (9)	0	1
Proposed Signs	Red (3)	0	1

* There are different linetypes for existing, proposed and sandblasted striping.

G. Signalization

Level Name	Color	Line type	Weight
Existing Conduit	White (0)	{Conduit20}	1
Existing Equip.	White (0)	2	1
Existing Loops	White (0)	2	1
Proposed Conduit	Blue (1)	{Conduit20}	3
Proposed Equip.	Blue (1)	0	2
Proposed Loops	Blue (1)	0	2
Remove Conduit	White (0)	{Conduit20}	0
Remove Equipment	White (0)	2	0

H. Water

Level Name	Color	Line type	Weight
Proposed Water Line and Service	Blue (1)	0	3
Proposed Hydrants, Valves, Reducers, Caps	Yellow (4)	0	2
Proposed Casing	Yellow (4)	0	2
Proposed Hatch Casing	Yellow (4)	0	2
Existing Water Line	Dk. Cyan (103)	custom	2
Existing Hydrants, Valves, Reducers, Caps	Must. (68)	0	1
Existing Casing	Must. (68)	3	1
Existing Hatch Casing	Must. (68)	3	1

Water Service <= 2”	Blue (1)	0	3

I. Sanitary Sewer

Level Name	Color	Line type	Weight
Existing Sewer	Dk. Orange (70)	custom	2
Exist.Manhole, Cleanout, Caps	Must. (68)	0	1
Existing Laterals	Dk. Orange (70)	3	1
Existing Casing	Gray (9)	3	1
Existing Hatch Casing	Brown (160)	3	1
Proposed Sewer	Orange (6)	0	3
Proposed Manhole, Cleanout, Caps	Yellow (4)	0	2
Proposed Laterals	Orange (6)	0	2
Proposed Casing	White (0)	0	2
Proposed Hatch Casing	Brown (160)	0	2
Centerline	White (0)	(Center)	1

J. Irrigation

Level Name	Color	Line type	Weight
Existing Irrigation System	White (0)	3	0
Heads	Cyan (7)	0	1
Text	Cyan (7)	0	1
Mainline	Blue (1)	0	2
Lateral Lines & Annotation	Green (2)	0	1
Equipment	Cyan (7)	0	1
Spray Pattern	White (0)	0	0
Electrical Wiring	Cyan (7)	0	1
Conduit Sleeves	Orange (6)	3	1

K. Landscaping

Level Name	Color	Line type	Weight
Shrubs or Groundcover	Green (2)	0	1
Plants	Green (2)	0	1
Trees	Green (2)	0	1
Mound Contours.	Red (3)	3	2

L. Utility

Level Name	Color	Line type	Weight
Water Main Existing	Dk. Green (162)	{W-Water}	1
Water Lateral	Dk. Green (162)	{Water}	1
Sewer Main Existing	Dk. Green (162)	{S-Sewer}	1
Sewer Lateral	Dk. Green (162)	{Sewer}	1
Edison	Dk. Green (162)	{Electrical}	1
Gas Main	Dk. Green (162)	{G-Gas}	1
Gas Lateral	Dk. Green (162)	{Gas}	1
Reclaimed Water	Dk. Green (162)	{RECL. W}	1
CATV	Dk. Green (162)	{CATV}	1
Phone	Dk. Green (162)	{Telephone}	1
OCSD	Dk. Green (162)	{S-Sewer}	1
MWD	Dk. Green (162)	{MWD}	1
Irrigation	Dk. Green (162)	{IRRI}	1
IRWD	Dk. Green (162)	{IRWD}	1
Mesa Consolidated Water District	Dk. Green (162)	{W-Water}	1
Traffic Conduit	Dk. Green (162)	{TS}	1
Stormdrain [1] See footnote	Dk. Green (162)	{SD}	1
Exist. Loops	Dk. Green (162)	0	1
Exist. Interconnect	Dk. Green (162)	{TS}	1
Navy	Dk. Green (162)	{Navy Fuel Line}	1
Fiber Optic	Dk. Green (162)	{FO}	1
Lighting Conduit	Dk. Green (162)	{Lighting}	1

1. Select line style based on pipe size

M. Sewer Profile

Level Name	Color	Line type	Weight
Grid	Gray (9)	0	
Sewer Exist.	White (0)	hidden	
Sewer Prop.	Orange (6)	0	3
Sewer Text	Orange (6)	0	
Station Text	Cyan (7)	0	
Exist. Grade	White (0)	hidden	
Finished Grade	Red (3)	0	
Manhole Exist.	White (0)	hidden	
Manhole Prop.	Blue (1)	0	
Cleanout Exist.	White (0)	hidden	
Cleanout Prop.	Blue (1)	0	
Casing Exist.	White (0)	hidden	
Casing Prop.	Blue (1)	0	

Utility Exist.	White (0)	hidden	
Utility Prop.	Yellow (4)	0	

N. Stormdrain Profile

Level Name	Color	Line type	Weight
Mainline-Lateral-Manhole-CatchBasin	Blue (1)	0	2
Proposed Text	Cyan (7)	0	1
Existing Surface	White (0)	3	1
Grid	Gray (9)	0	0
Existing Utility	White (0)	3	1
Station Text	Cyan (7)	0	1
Proposed Profile	Red (3)	0	1

O. Street Improvement Profile

Level Name	Color	Line type	Weight
Existing Text	White (0)	0	1
Proposed Text	Cyan (7)	0	1
Existing Surface	White (0)	3	1
Proposed Surface	Red (3)	0	3
Grid	Gray (9)	0	0
Existing Utility	White (0)	3	1

P. Sheet File

Level Name	Color	Line type	Weight
Existing Text	White (0)	0	1
Design Text	Cyan (7)	0	1
Construction Note	Cyan (7)	0	1
Street Name	Cyan (7)	0	1
Match Line	Red (3)	0	4
Bubble Note	Cyan (7)	0	1
Existing Dimensions	White (0)	0	1
Proposed Dimensions	Cyan (7)	0	1
North Arrow	Cyan (7)	0	1
Detail	Cyan (7)	0	1
X-Section	Cyan (7)	0	1
Clip Boundary	Cyan (7)	0	1
Plan Boundary	Cyan (7)	0	1

Q. Title Border

Level Name	Color	Line type	Weight
Title Block Text Variable	Cyan (7)	0	1
Title Block Text Fix	Cyan (7)	0	1
Title Block Line	*Cyan (7)	0	1
Stamp	Cyan (7)	0	1
Project Title	Cyan (7)	0	1
Project Limits	Cyan (7)	0	1
Profile Grid	*Gray (160)	0	1
Plot Fence	Green (11)	1	0
Plan Type	Cyan (7)	0	1
Clip	Blue (1)	1	0

R. Title Sheet

Level Name	Color	Line type	Weight
Logos	Cyan (7)	0	1
Map	0	0	0
Notes and Details Light	White(0)	0	0
Notes and Details Medium	Cyan(7)	0	1
Notes and Details Bold	Yellow(4)	0	2
Notes and Details Heavy	Red(3)	0	3
Plot Fence	Lt Green(11)	1	0

*Varies: All text should be color cyan (7), Location Map should have: hatch color (116), R/W color (3), and Vicinity Map remains the same. Sheet Format Line level will have different types of colors, red (3), cyan (7), white (0).